DEVELOPMENT, OPTIMIZATION AND SCALE-UP OF BIODIESEL PRODUCTION FROM CRUDE PALM OIL AND EFFECTIVE USE IN DEVELOPING COUNTRIES

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An industrial project is developed to optimize the chemically catalysed biodiesel production from crude palm oil. This process is intended to be applied on a one ton scale and to be used on the palm oil production facility in equatorial Africa (Ivory Coast and later Cameroon). The produced biodiesel is consumed for the fleet of the company. Because of the specific conditions (unrefined oil with possibly high acidity as starting material, application on the field in technologically difficult conditions), it was essential for the developed procedure to be robust and simple, and to use the minimal amounts of chemicals. The process was optimised on lab-scale, up-scaled in the following year, and is since then successfully applied as intended, on the palm oil plantation. The produced biodiesel is used in pure form, without mixing with petroleum fuel and without additives. Even after several years of continuous use, no negative effects were noticed on the engines. The process efficiency and durability are ultimately confirmed and described.